

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
3 February 2005 (03.02.2005)

PCT

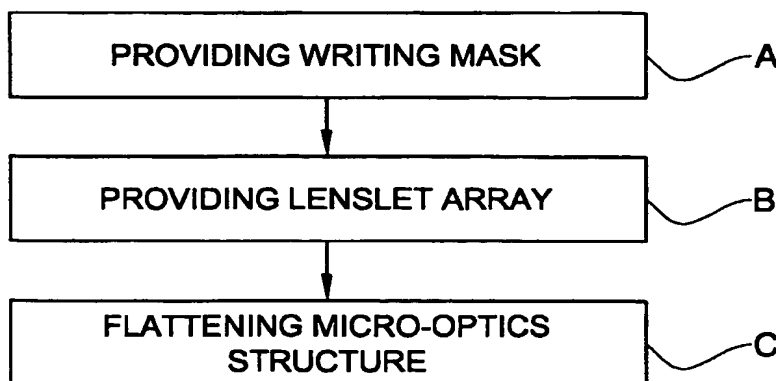
(10) International Publication Number
WO 2005/010573 A1

- (51) International Patent Classification⁷: **G02B 3/00**, (74) Agent: **REINHOLD COHN AND PARTNERS**; P.O. BOX 4060, 61040 TEL AVIV (IL).
G03F 7/00
- (21) International Application Number: PCT/IL2004/000678
- (22) International Filing Date: 25 July 2004 (25.07.2004)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data: 60/490,655 24 July 2003 (24.07.2003) US
- (71) Applicants (for all designated States except US): **EX-PLAY LTD.** [IL/IL]; Huzot Shfaim, 2nd Floor, P.O.Box 12, 68990 Kibbutz Shfaim (IL). **KAPELLNER, Yuval** [IL/IL]; 2/2 Hadadi Street, 59513 Bat Yam (IL).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **ZALEVSKY, Zeev** [IL/IL]; 1 HaChermon Street, 48560 Rosh HaAyin (IL). **ECKHOUSE, Vardit** [IL/IL]; 10 Remez Street, 62191 Tel-Aviv (IL). **EYAL, Izhar** [IL/IL]; 7 Shlomo Ben Yosef Street, 59402 Bat-Yam (IL). **RUDNITSKY, Arkady** [IL/IL]; 38 Gluskin Street, 76740 Rehovot (IL). **COHEN, Nadav** [IL/IL]; 2 Kehilat Venezia Street, 69400 Tel Aviv (IL).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:
— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: METHOD FOR PRODUCTION OF MICRO-OPTICS STRUCTURES



(57) Abstract: A novel method for fabricating a micro-optics structure, having at least one lenslet array, is presented. A writing mask is provided being configured in accordance with an arrangement of the lenslet array to be manufactured. The writing mask is applied to a structure formed by a photosensitive layer of a predetermined thickness carried by a substrate, and the photosensitive layer is exposed through the writing mask using a predetermined spectral range of the exposure and a predetermined distance between the mask and said photosensitive layer, to thereby pattern the photosensitive layer through a

diffraction optical element of said mask. The so-obtained pattern is in the form of optical nonhomogeneities in the photosensitive layer material, defining the lenslet array within the photosensitive layer.